



Operation of NEUMANN fet 80<sup>R</sup>(i) microphones in conjunction with unbalanced or center tap grounded inputs

The microphones of the fet 80<sup>R</sup> (i) series are phantom powered from 48 Vdc according to IEC 268-15A/DIN 45 596.

In phantom powering both modulation conductors of the microphone cable as well as the modulation leaving the power supply are at the powering voltage potential of +48 Vdc. For professional balanced and floating amplifiers and console inputs this is of no consequence. However when such phantom powered microphones are connected to inputs which have side or the center tap grounded, the powering voltage is shorted out and no operation is possible.

For center tap grounded equipment with an input transformer (e.g. some NAGRA NAGRA recorders), this center tap ground can virtually always be disconnected without causing any negative operational results.

For connection of NEUMANN fet 80<sup>R</sup> microphones to unbalanced inputs, there are the following possibilities:

1. Microphone and power supply may be operated without any alterations even into unbalanced or center tap grounded inputs, if a high quality cable transformer (1:1 turns ratio) of the AT 8/1 (i) type is inserted into the modulation line.

Since there are numerous types of microphone input connectors, this transformer is supplied with stripped and tinned secondary leads only. A specific connector will be attached to the secondary on special order and at additional price.

The maximum input signal capability of the AT 8/1 (i) is 300 mV at 40 Hz; frequency range is 30...16,000 Hz. Fig. 1

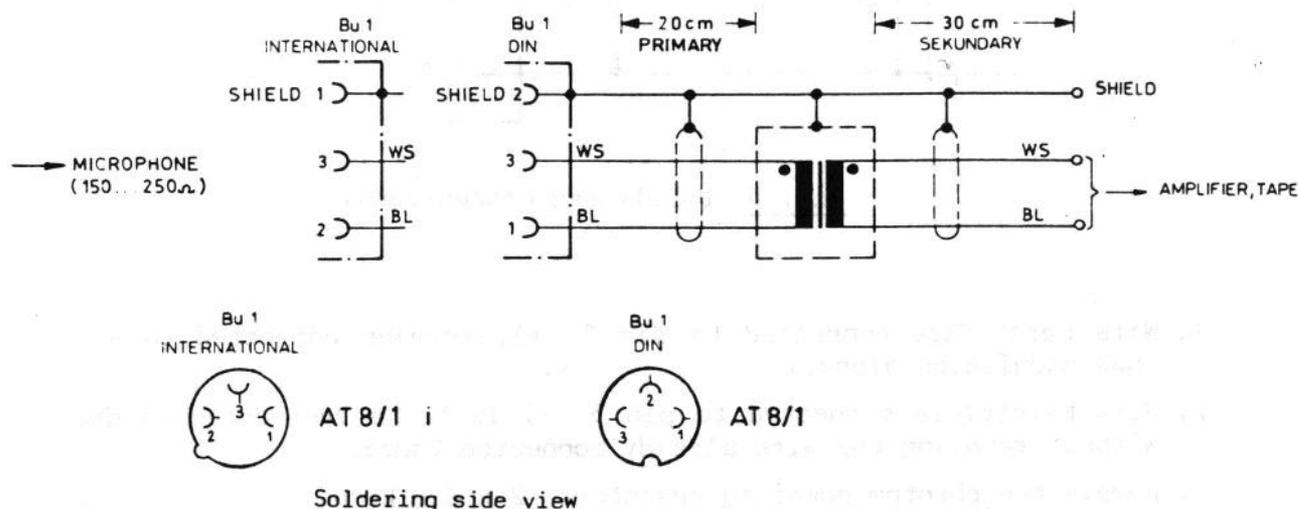


Fig. 1

2. Microphone and power supply may be converted to unbalanced operation in the field through a minor alteration. This change is recommended if the microphone is to be used exclusively with unbalanced inputs such as semi-professional or home equipment. Fig. 2...5

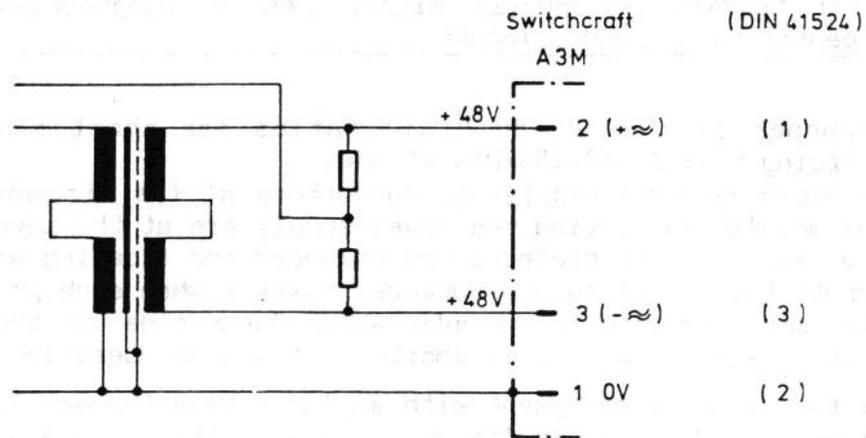


Fig. 2 Standard, balanced configuration of Neumann microphone outputs.

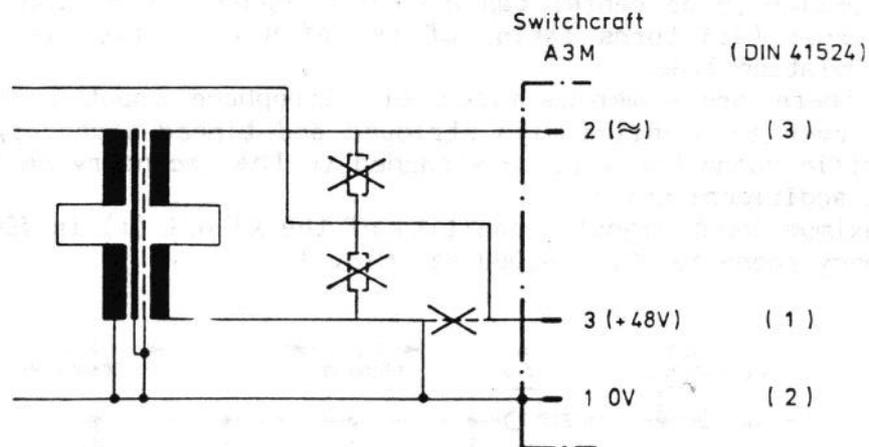


Fig. 3 Unbalanced connections.

1. Wire heretofore connected to pin 2 (+), remains connected to pin 2 (now modulation alone).
2. Wire heretofore connected to pin 3 (-) is to be resoldered to pin 1 without removing the wire already connected there.
3. Remove the phantom powering resistors (2 x 6.8 kohm).
4. Move the wire previously connected to the junction of these resistors to pin 3.

The circuit then conforms to IEC 268-12.

For microphones equipped with connectors per DIN 41524 (Binder, Mini-Tuchel), the following changes are necessary:

1. Wire heretofore soldered to pin 3 (-) is to be resoldered to pin 2 without removing the wire already connected there.
2. Wire heretofore connected to pin 1 (+) is to be resoldered to pin 3.
3. Remove the phantom powering resistors.
4. Install a new wire from the junction of these resistors to pin 1.

The circuit then corresponds to DIN 45594 Type L.

The IC 3, IC 4, KT 1 Microphone Cables require no changes.

#### Conversion of the N 452 i, BS 945 i etc. Power Supplies:

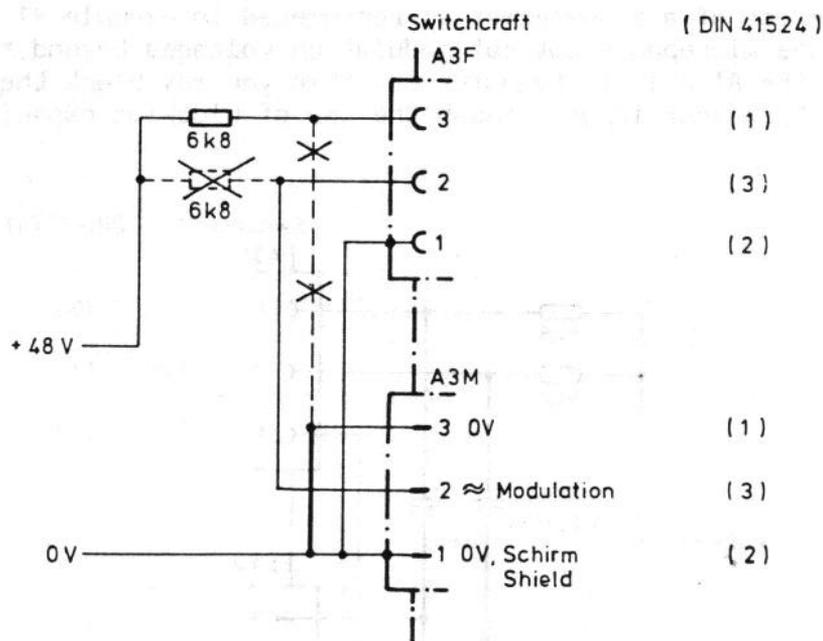


Fig. 4

1. Remove and discard the 6.8 kohm resistor soldered to pin 2.
2. Remove and discard the wire heretofore connected to pin 3 (output side).
3. Strap pin 1 and pin 3 together (output side).

For microphones equipped with connectors per DIN 41524, the following applies:

The pin numbers of Figs. 1, 2, 3 correspond to the pin numbers 2, 3, 1 in this order (see also the schematic supplied with your equipment).

Audio Modulation cable to the amplifier, tape recorder etc. equipped with unbalanced input:

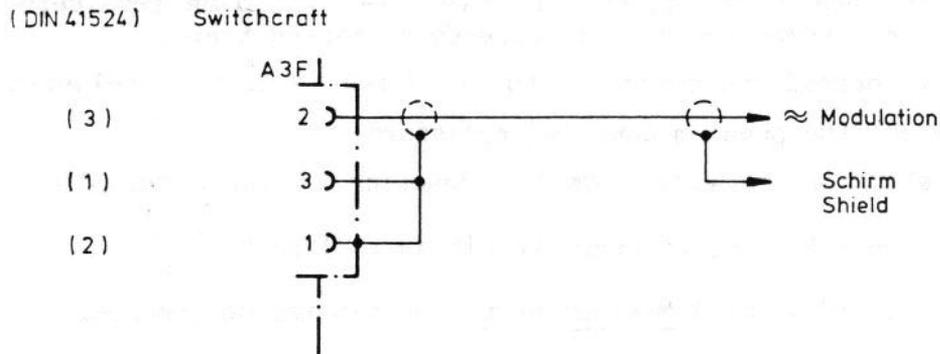


Fig. 5

3. Should the use of a transformer as recommended in example #1 not be desirable or the microphone put out modulation voltages beyond those permissible for the AT 8/1 (i) transformer, then you may block the 48 Vdc phantom power from your input through the use of blocking capacitors:

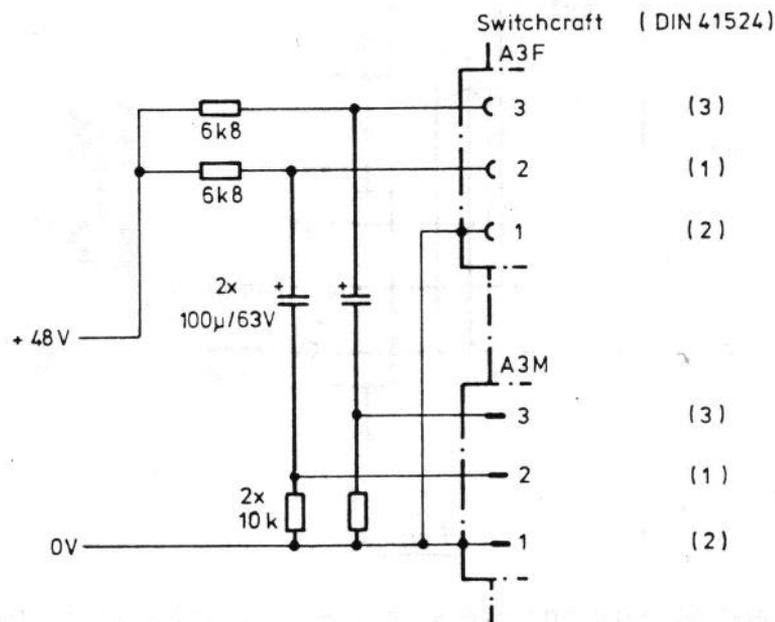


Fig. 6

Pin numbers in parentheses refer to microphones equipped with connectors according to DIN 41524 (Binder or Amphenol-Tuchel).

Errors excepted. Subject to changes.